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ANÆMIA AND ITS CONSEQUENCES;

ENLARGEMENT OF THE THYROID GLAND AND EYEBALLS.

BY

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ANÆMIA AND GOITRE—ARE THEY RELATED?

I PROPOSE to attempt an answer to this question by a short review of some cases which have come under my own observation during the last few years, in which *impoverishment of the blood*, originating in a manifest source, and existing as a primary and chief symptom, has been associated with enlargement of the thyroid gland, and with a remarkable enlargement also of the eyeballs; and where, under treatment adapted to the cure of the constitutional affection, the local diseases have been arrested, reduced, or ultimately removed—affording evidence sufficiently satisfactory that these affections stood to each other in the relation of cause and effect.

Anæmia may spring from different causes, and acknowledge various forms and degrees. It may originate in defect or failure of the functions of assimilation and sanguification, and as a *cachexia* manifest itself in the different shades of *bloodlessness*, as represented in the pale chlorotic girl, the exsanguined coal-miner of Anzain,¹ or in the remarkable case of Haynes, as described by my friend Dr Combe, in a valuable communication made at an early period of the proceedings of this Society, and subsequently published in their Transactions;²—or it may occur as the result of changes in the

¹ Journal de Medicine, tom. ix. p. 3.

² Edin. Med. Chir. Trans. vol. i. p. 194.

relative proportions of the constituent elements of the blood, and as a *hæmorrhagy* present the features of impoverishment of blood, in the many forms of disorder, the consequence of artificial and spontaneous drains, which we are accustomed to witness from day to day.

In all its forms, and from whatever cause it may originate, anæmia presents the same general and physical signs, and these will detect it in the endless variety of disordered functions pertaining to every organ of the body, and in those local diseases with which it is complicated, and to which it gives rise.

It is the *vascular* form of goitre which I have found in connexion with the condition referred to, and I am inclined to believe that the coincidence of the glandular enlargement with a deteriorated state of the blood is by no means rare; and that those who have opportunities of observing the local affection, especially in its early stages, will find on inquiry that it has coexisted with some functional derangement, or perhaps with some organic disease, which in its nature has a tendency to vitiate or impoverish the circulating fluid, though the influence of such disorder may have fallen short of the production of what is more strictly speaking termed *anæmia*.

That an anæmic condition of the system is the true cause of bronchocele in those districts of the country where it prevails in an endemic form, I am not prepared to assert; but the wretched condition of the vast number of its unhappy victims, and the physical causes which have generally been assigned for its prevalence, together with the pale exsanguined complexion, the protuberant eyeball, and other signs of *anæmia* manifested by its subjects, render the conjecture not improbable.¹

In all countries, and equally in the endemic and sporadic forms, bronchocele has been observed to make its appearance and to develop itself rapidly during confinement in childbed, and to undergo a temporary augmentation at the period of menstruation. Dr Copland has seldom met with an instance in the female unconnected with some kind of irregularity in the catamenial discharge, or disorder in the uterine function; but I have not been able to find any reference to the condition of the blood, as influenced by such disorders, in explanation of the connexion of the two diseases.

¹ It is a curious coincidence, and worthy of remark, that the blood-impo-
verished coal-miner of Anzain,² and the goitrous peasant of the Alps, both attribute their apparently dissimilar maladies to the quality of the water they are accustomed to use for their daily sustenance; and that the late researches of M'Clelland, Bally, and Inglis, in different and far distant parts of the world, have gone far to establish the fact, that the endemic prevalence of goitre is connected with the use of water impregnated with calcareous salts. May not the habitual employment of such water so influence digestion, assimilation, and sanguification, as to lead to the anæmic condition, which, in its turn again, is the cause of the development of goitre?

² Mackintosh's Elements of Pathology, vol. i. p. 549.

Dr Parry had often seen goitre follow diseases of the heart and other maladies, especially those called nervous, and other writers have noticed palpitations and affections of the lungs in connexion with it; but the former suspected the gland itself to be intended as a diverticulum for blood disposed to flow with too great force to the brain, and the latter have generally considered the chest disorder as the consequence of the local disease, and the derangement it occasioned in the circulation of the blood, instead of regarding it as an indication of a deranged condition of the fluid itself—a condition which, I apprehend, in many of such cases, is the true cause both of the cardiac and pulmonary as well as the thyroïdal disease. A just appreciation and skilful application of the means of diagnosis *now* within our reach, must lead to the discrimination of these affections, by discovering those simple and all but infallible signs which tell of the *quality* of the blood in the heart and its unfilled vessels.

It is a form of the *hydrophthalmia* of systematic writers—perhaps that form of dropsy denominated *buphthalmos*, or *ox-eye*, which has accompanied the enlarged thyroid gland as a concomitant symptom of anæmia in the cases now to be related. The etiology of this affection of the eye is acknowledged to be obscure, and our best English writers have done little to elucidate the subject. It is sometimes observed as a congenital affection, and in conjunction with hydrocephalus or other disease of the brain. Its connexion with anæmia, strictly so called, is not referred to, though its dependence on a morbid condition of the system has been admitted by some writers, and scrofula, cachexia, and chlorosis specified as causes. Beer has noticed it as appearing in chlorotic girls as a symptom of that cachexia. Juengken regards it as resulting, among other causes, from serious abdominal disturbances, particularly those connected with menstruation, and from hemorrhoids; but Mr Lawrence, in his learned and classical work on diseases of the eye, remarks, that “the facts which have come under his observation have not afforded the slightest support to these pathological views, nor to the measures of treatment founded on them.” I cannot, however, reject them, having found this enlargement of the globe of the eye the result of congestion and effusion, intimately connected with that condition of the system in which the blood is deficient in fibrin and colouring matter, and yielding to a plan of treatment founded on this principle. How the eyeball and thyroid gland are specially called on to manifest this state of disordered blood remains to be determined.

In all the three cases which have come under my own observation, the sight has been little if at all affected, neither has there been any complaint of pain; the cornea has been healthy, the iris natural, and the pupil fitted to discharge its functions. The congestion or effusion appeared to be in the vitreous humour, the chambers of the aqueous maintaining, at least in two cases, their normal size; the eyeball was enlarged and firm, conveying to the fingers, when

pressed, the sensation of great distension. In one case the globe was so full and prominent, that when the patient slept her friends remarked that the eyelids did not cover the ball. Distrusting my own powers of diagnosis in a matter relating to the minute pathology of the eye, I requested my friend, Mr Walker, well known as an experienced oculist, to examine the subject of the second case, now in progress of recovery; he has kindly done so, and favoured me with the following statement regarding it:—

“Both eyes are considerably more prominent than natural; the eyelids, however, close completely over the globes, which Mrs M. says they did not do for some time. Vision is not at all impaired, nor is there any pain in the eyes, but often, she says, there is a feeling of distension. The corneæ are of their natural size and shape; the anterior chambers are not larger than usual; the irides are lively and active; and the lenses are quite transparent. The sclerotic of both eyes is evidently distended from an increased secretion within; they are larger than usual, have somewhat of a bluish colour a little anterior to the insertions of the recti muscles, although they do not seem to be thinned at that point; have a slightly flattened appearance, and do not present the usual globular shape that they do in the healthy eye. Both eyes are much harder than natural. There is no appearance of any morbid growth in the orbits—the globes can be pressed backwards as usual without causing any pain, and their movements are natural.”

I.—In the autumn of 1839 my attention was called, for the first time, to the connexion of goitre and anæmia in the case of a lady, aged thirty-two, one of a numerous and healthy family, which, with one exception, had grown up to manhood. She had married at the age of twenty-four, and continued to enjoy for many years a full share of health. She had no family, nor had ever been pregnant. For some years before I saw her she had suffered from continued mental anxieties and distress, and had laboured under profuse leucorrhœa, by which her general health and appearance were much affected. For the last four or five months she had complained of inordinate pulsation of the heart, which was greatly increased by excitement, by going up stairs, by walking fast, by every thing, in fact, which hurried the circulation. At these times her face, which was otherwise pallid, flushed, and she became confused. The eyes presented an unusual appearance, being prominent and staring, giving a wild and startled expression to the countenance; a much larger share of the albuginea was seen than in the normal condition; the membrane looked dark at a distance, and when examined near was found to be pervaded by vessels—many of these were also seen apparently in the sclerotic coat itself when examined through a lens; there was no dimness of vision, but a painful sense of distension of the eyeballs; all this was increased on the occasion of palpitation, or when the face was flushed. Simultaneously with the appearance of

these symptoms, an enlargement of the thyroid gland manifested itself. It was soft, smooth, and elastic, and of equal character throughout, presenting the form of the hypertrophied gland, and had rapidly developed itself to its present size—that of three or four times the magnitude of the gland in health; but it was subject to remarkable variations in this respect, according to the state of mind, rest, or palpitation. It appeared to be highly vascular, and conveyed to the touch the sensation of an erectile tumour. It had suffered no diminution from the continued application of iodine. The pulse at this time generally ranged from 100 to 130; it was small and jerking, and, on the occasions of excitement, accompanied by a thrill. The inordinate action of the heart was felt beating in the head, so as to produce a state of almost constant watchfulness. There was much breathlessness, and frequent faintness, severe headach, vertigo, and tinnitus aurium. On attentively listening to the heart's action, the contraction of the ventricles seemed somewhat prolonged, and it was attended, especially under palpitation, by a soft bellows-murmur at the aortic orifice, and a corresponding *bruit* was heard in the carotid and other large arterial trunks; there was no extended præcordial dulness, neither was the impulse of the heart very remarkable. Along with these symptoms there was a high degree of nervousness, and much derangement of the digestive functions. The catamenial discharge was imperfect and irregular. A variety of treatment had been for some time pursued for the relief of these symptoms. Blood-letting had been resorted to, with that measure of benefit which Dr Marshall Hall has so well described and accounted for in such circumstances,¹ digitalis, mercury, and many others, but all in vain, and the condition of the patient was considered hazardous. The appearances and signs, however, were manifestly those of impoverished blood, and with this view a change of remedies was adopted, which, after perseverance in for many months, has issued in restoration to health. This consisted of large doses of the carbonate of iron, with gentle aloetic purges, soothing doses of hyoscyamus, a full diet of animal food, a change of air to the seaside, and regular passive exercise in the open air. Under this plan the general system gradually became renovated, the leucorrhœa subsided, the goitrous swelling diminished and disappeared, the eyes regained their wonted character, the complexion its accustomed hue, and the heart and arteries their normal beat. This lady travelled on the continent for many months after I first saw her, and I had no opportunity of ascertaining the progress of her restoration; but I saw her two years ago, and she was then quite well.

II.—Some years passed away before I had an opportunity of again tracing the connexion between bronchocele and anæmia, and verifying the symptoms and appearances just described, when I was consulted by my friend Dr Beilby, in the winter of 1846, in the case of

¹ "On Loss of Blood." Med. Chir. Trans. vol. xiii. p. 140.

a lady aged thirty, married, and the mother of two children. The commencement of her illness was marked by long-continued and frequent hemorrhage from internal piles, often for weeks together, to the amount of 5 or 6 oz. daily, and extending over a period of between three and four years, during a long period of which she had been subjected to much anxiety and distress of mind. The hemorrhage at last ceased on the occurrence of an abscess near the anus, and never returned; but it left her reduced in strength and exsanguine. She had too long disregarded the repeated loss of blood, and only became alive to her situation when the violent palpitation of the heart, with throbbing and giddiness of the head, arrested her attention, which occurred almost immediately on the cessation of the hemorrhage. The catamenia continued regular. On my first visit, twelve months after the appearance of these symptoms, the large and prominent eyeball, which I cannot well describe, but which once seen cannot be readily forgotten, the dark discoloured eyelid, and the pallid complexion which bespeaks poverty of blood, induced me to examine the thyroid gland before listening to the heart's action, or feeling the pulse at the wrist. It was tumid and hypertrophied, especially the lateral lobes, which were enlarged to four or five times their normal bulk, and had long resisted the use of iodine, which had been administered in large measure, and, according to the experience of the patient, with manifest disadvantage. The tumour, as in the former case, was subject to remarkable variations, according to the state of the circulation, augmenting and decreasing as excitement or rest prevailed. She felt very sensitively the marked change in her expression, from what she termed the protruding eyes, and experienced at same time great discomfort from the sense of pressure, as if the eyeball were too large for the orbit. I need not repeat a description of the symptoms—the throbbing of the head, the ceaseless impulse of the heart, the anæmic murmur of the ventricle, the continuous rushing sounds in the veins of the neck and in the thyroid swelling, the whiff of the carotids, or the jerking of the pulse at the wrist. One set of symptoms I may notice in the words of the patient herself,—“A very painful sensation was experienced on leaving the horizontal posture, violent cough came on, causing retching and an agonizing pain in the head, seemingly caused by an extreme rush of blood to the brain, with a sense of bursting. This was relieved on resuming the horizontal posture, and taking food. As a preventive, I was forced for some months to breakfast immediately on awaking from sleep, lying perfectly still in the posture in which I awoke, as even a slight raising of the head would occasion distressing pain. After eating I could rise with impunity.” These are manifestations of the enfeebled brain, and part of the train of symptoms induced by impoverished blood. Every symptom was referable to this state; the murmur of the heart, and arteries, and veins, proclaimed its presence, and nothing remained but

to recommend the simple, safe, and satisfactory treatment of the former case. It was begun and persisted in for some time, and attended by beneficial results; it was interrupted, however, from various causes, so that the success has not been equal to its known efficacy. Still, however, at this time the patient is manifestly improved, the thyroïdal swelling is greatly reduced, the protruding eyeballs much less conspicuous, and all the signs which accompany the anæmic condition gradually disappearing. She can walk many miles without breathlessness, and lie down and rise up without pain or confusion.

III.—A third sufferer from anæmia and goitre I have at this time under my care, in the person of an unmarried lady, aged fifty, who had for a long series of years enjoyed perfect health till about four years ago, when she became the subject of dyspeptic and uterine derangement. For many months she laboured under profuse and wasting leucorrhœa, when the protracted drain was followed by distressing palpitation, hurried breathing, rapid, feeble, and jerking pulse, pallid complexion, varied by flushing on the least excitement or exertion, great nervousness, disordered secretions, the characteristic eye, and the hypertrophied thyroid of this form of anæmia. The isthmus of the gland was more prominent than in the former cases, but the bulk of the tumour was less than in either. She had undergone a variety of treatment, with varying success for some years before I saw her for the first time, two years ago. At that time she was chiefly anxious regarding the protuberant eyeballs, and little concerned about the goitre or her general health, which she had begun to think did not admit of remedy. The general and physical signs were those of anæmia; and, believing that the local affection would yield to constitutional treatment, she was immediately placed under full doses of iron, the citrate was the form employed, full diet of animal food, and a moderate share of Bass's ale. She improved rapidly, but was seized in the autumn of 1847 with severe dysentery, then epidemic in the city. Through this ordeal she struggled, and, after a tedious convalescence, she regained her former position; the goitrous swelling and the projecting eyeballs appeared to suffer no change during this long illness, neither was the anæmic murmur of the heart and arteries affected by it. She resumed her former treatment, which had been interrupted by the attack of dysentery; and now, at the close of another twelvemonth, she is greatly improved in health, the thyroïdal swelling is scarcely perceptible, the protuberant eyeball much reduced, the pulse, though rapid and feeble, and still easily affected by exciting causes, greatly moderated, and the breathing much more natural. There are no contra-indications to the continued use of iron and animal food; and a confident expectation may be entertained, that, under the persistent employment of them, the functions of assimilation and sanguification will be restored to health,

and the local disorders now dependent on their morbid condition entirely removed.

I might add to these histories of anæmia and goitre, thus rapidly gone over, other cases communicated to me by professional friends in illustration of the connexion; but I shall not detain the Society longer than merely to state, that in one case the anæmic condition was the consequence of long-continued hemorrhage from the bowels, and complicated with enlargement of the thyroid gland and eyeballs; in another, these were associated with amenorrhœa; and in a third, the goitrous swelling, without the enlarged eyeballs, was observed in a young woman labouring under chlorosis. It deserves remark, that in all the cases now referred to, the subjects were females.

I had proceeded thus far with my narrative, when my attention was called to a paper in the *Dublin Journal of Medical Science*,¹ entitled, "Observations on a *peculiar* form of disease of the heart, attended by enlargement of the thyroid gland and eyeballs," by Dr R. L. Macdonnell of Dublin, and at the same time to Mr Hill's Remarks on that communication,² and through them, to the proceedings of the Dublin Pathological Society,³ where Sir Henry Marsh had more than once introduced the subject of this form of heart disease. These, as well as the notice of other cases by Dr Graves,⁴ I am somewhat ashamed to acknowledge, had previously escaped my observation. I have now perused them with great interest, and beg to call the attention of the members of this Society to them, as affording additional value to the cases now submitted; and I hope to show a satisfactory confirmation of the views I have been led to take of the subject, though it is not without considerable hesitation that I venture to claim them as illustrations of anæmia, seeing that some of the most eminent physicians of the sister island have regarded them as examples of a *peculiar* form of cardiac disease, and neither indicated by their observations, nor by the mode of treatment adopted, that they consider them cases of that description.

In each of the three cases which I have just related, it will be observed that there existed an adequate cause of *impoverishment of blood*; in two, in the form of lasting leucorrhœa; in the other, in that of continued hemorrhoidal discharge;—that these drains first affected the heart, producing the anæmic palpitation; subsequently symptoms referred to the brain and the lungs; in fact, the well-known symptoms of *poverty of blood*, to which I have taken leave to add, as part of the train of sequences, enlargement of the thyroid gland and eyeballs. I remark a considerable variety in the cases now on record, in regard to the appearance of the prominent

¹ Vol. xxvii. p. 200.

² Ibid. p. 399.

³ Dublin Journal of Medical Science, vol. xx. p. 471.

⁴ Clinical Lectures, vol. ii. p. 193.

symptoms. In some, the enlargement of the thyroid exists without the dropsy of the eye; in others, the enlarged eyes without the goitrous swelling; while in those in which they coexist, a considerable interval of time has elapsed before the one has followed the other;—but in all, the manifestations of disordered circulation have been first observed.

The Dublin cases, in all essential characters, bear a striking resemblance to the three histories now read; and though the fact of the subjects of them being sufferers from *impoverishment of blood* is not adverted to by any of the authors, I apprehend that sufficient evidence is afforded by such of the cases as are detailed at length, to show that such was the condition of the patient. For instance, John M'Keon, the subject of the first case related by Dr Macdonnell, long before the first symptoms of cardiac affection presented themselves, is stated to have suffered from indigestion, so that his food was passed in an almost unaltered state; to have been subject to prolapsus ani, and occasionally attacked with bleeding from the protruded gut. It is mentioned also in regard to him, that he was subject to diarrhœa, by which he was greatly exhausted; that at one time it lasted for four months, obliging him to go to stool fifteen or sixteen times a-day; that towards the close of this attack, the stools acquired a black colour, and highly offensive odour, and that there were at times profuse discharges of blackish flakes like tea-leaves. It was about this period, says Dr Macdonnell, that he first began to suffer from palpitations; his pulse was never under 120, and was at times as high as 200 (?). Then follow in succession the enlargement of the thyroid, excruciating headaches, throbbing and sleeplessness, enlargement of the eyeballs, and all the group of symptoms already enumerated.

The second case detailed by Dr Macdonnell, appears to me to bear evidence also of the anæmic condition. The subject of it, a woman aged twenty-two, of leucophlegmatic habit, began to menstruate at fifteen, up till which time she enjoyed good health, and ever afterwards she suffered from leucorrhœa, and latterly from amenorrhœa. She then became affected with violent headach, palpitations, great lightness of head, enlargement of the eyeballs, “with a peculiar staring appearance, which attracted the attention of all her friends, and on more than one occasion induced them to think that she had become maniacal,” together with a numerous train of symptoms the detail of which is unnecessary.

Dr Graves, in his admirable clinical lectures, refers to three cases of violent and long-continued palpitation in females which he had lately seen, in each of which the same peculiarity presented itself, viz., enlargement of the thyroid gland; but he has not detailed the history of these cases, nor indicated his views of their origin, but he has given, at some length, the case of a lady aged twenty (communicated to him by a friend) who became affected with some symptoms which were supposed to be hysterical. After she had been in this nervous state about three months, it was observed that her pulse had

become singularly rapid. The rapidity existed without any apparent cause, and was constant, the pulse being never under 120, and often much higher. She next complained of weakness on exertion, and began to look *pale* and *thin*—the rapidity of the heart's action continued, and then the enlargement of the eyes took place, and afterwards that of the thyroid gland. In about fourteen months the heart presented all the signs of Laennec's passive aneurism. It would be highly instructive could we ascertain the character of those symptoms "supposed to be hysterical," and the general state of health during the three months immediately preceding the period when the pulse became singularly rapid, and not less so could we ascertain that they were connected with some leucorrhœal or other drain.

The investigations of Sir Henry Marsh, who was the first, I believe, to describe the symptoms during life, and as yet the only one the appearances after death in this interesting affection, are very valuable. At a meeting of the Pathological Society of Dublin in January 1841, this eminent physician, after adverting to the fact of his having, the year before, described to the Society a *singular variety of disease of the heart*, now wished to exhibit another preparation illustrating this "*very curious and interesting affection*." The disease of which he then spoke presented the following striking characters—remarkable engorgement of the veins, particularly of those of the neck, rapid, violent, and irregular action of the heart, and these in every instance coexisting with enlargement and swelling of the thyroid gland. He also mentioned that, in the majority of these cases, there was a remarkable prominence and protrusion of the eyeballs, so as to give to the group of symptoms by which this disease was characterised a very striking feature. After describing the leading symptoms more particularly, he goes on to exhibit the appearances on dissection, to which I shall afterwards allude, and then read the notes of another case which had lately come under his notice, and in which he observed, "the disease was very well marked." The subject of it was a woman, aged forty, who had been originally very plump. She had been married, had borne ten children, and menstruated regularly. She was a person of lively and energetic manner, of a highly nervous temperament, and evinced much activity both of body and mind. She had been subject to *epistaxis*, but exhibited no signs of disease either of the heart or chest. She had been for a considerable time in attendance on an epileptic relative, and this had kept her in a constant state of nervous excitement and apprehension. Sir Henry said he mentioned this particularly, because the disease he had been describing seemed to begin with nervous palpitations. Her face was *pale* and somewhat tumid, eyes prominent, her lips purplish, the veins of the neck considerably distended, and the thyroid body much enlarged. The impulse of the heart gave motion to the integuments over a space exceeding far the ordinary limits of the cardiac region; and there was a considerable extent of dulness

on percussion. The first sound of the heart was short, quick, and loud ; the second faint and scarcely audible, in consequence of being masked by the first, but there was no *bruit de soufflet* or any other abnormal sound. She complained of attacks of dyspnœa in the morning, accompanied by a sensation of fluttering in the heart. Any unusual exertion or sudden mental emotion was sufficient to bring on distressing palpitations. Her pulse was quick and jerking, never below 90 ; her respiration clear and puerile. The bruit in the carotid artery, where it was pressed on by the thyroid gland, was actually perceived by the patient, and caused a great deal of annoyance. She felt a whizzing sound in her neck, of which she never could get rid, and it was one of her most distressing sensations. Sir Henry considers this a good description of the disease. He thought there was no valvular disease ; but he believed that if the affection had been unchecked, morbid alteration of the valves would have been the probable result. In the treatment the strictest quiet and rest were enjoined, and the exhibition of the carbonate of iron with extract of hyoscyamus was very beneficial.¹ In all this, I think, we cannot fail to recognise a faithful picture of anæmia—the history, the progress, the development, the means of relief, all testify to it ; and if any irregularity in the physical signs is calculated to raise a doubt, that doubt should be removed when we call to mind, that long-continued functional derangement of the heart, such as that produced by anæmia, may sooner or later pass into dilatation of the chambers of that organ, and so modify considerably the signs emitted by auscultation and percussion.

On reviewing the history of bronchocele and its association with other disorders, I am willing to admit the force of Professor Hasse's observation, that the different varieties occur so often independently of, or only accidentally complicated with other diseases, that it is by no means an easy matter to establish any constant relation between them ; still I cannot but hope that an approach has been made towards this end by the views indicated, and the cases recorded in the preceding remarks. We have seen the thyroidal swelling in connexion with leucorrhœal and hæmorrhoidal discharges, commencing when the drain has been established, obtaining its full development when that drain impoverished the blood, and subsiding under the use of means which we know are calculated to restore the red particles. And what are the other known conditions and disorders which have been observed in conjunction with goitre, but just such as are capable, under particular circumstances, of producing the same deterioration, or are themselves the signs and evidence of that deterioration ? The influence or presence of child-bearing and menstruation, or of menorrhagia and amenorrhœa, can readily be understood to operate in this way.

The attempt to connect bronchocele with excitement of the gene-

¹ Dublin Journal of Medical Science, Vol. xx. p. 472.

rative system, and to establish a relation between the diseases of the thyroid gland and those of the genital organs, has entirely failed. If some of the cases now related appear to countenance such an opinion, in consequence of the illustration they afford of the glandular swelling being associated with the uterine affection, the others afford no such support; while they all equally confirm the simple view already taken, and prove that the same train of events follows the continued hæmorrhoidal discharge and the leucorrhœal drain.

And here I cannot help adverting to the misconception which I apprehend prevails, at least in some cases, in regard to the effects which the thyroïdal tumour is supposed to produce by means of its interference with the circulation and respiration. The pressure of the enlarged gland is every where acknowledged to be the cause of obstruction to the free descent of blood from the head, and in this way the occasion of headach, giddiness, confusion of thought, and other symptoms already enumerated. These views were entertained in regard to that class of symptoms in some of the cases just related, and led to the adoption of a line of practice not likely to be beneficial; but an attentive observation of the origin and development of the whole phenomena, will, I apprehend, lead to sounder views, and ascribe to the want of healthy and sufficient circulation through the brain, the effects supposed to arise from an opposite condition—the impoverishment of blood being the cause, at once of the disorder of the brain, the embarrassment of the lungs, the labouring of the heart, and the congestive turgescence of the eyeball and the thyroid gland. It cannot have escaped observation, that sufficient evidence of that impoverishment, and an adequate cause for its presence, existed previously to any manifestation of disordered cerebral or pulmonary circulation; while I may here mention that in all the cases the bronchocele was of a soft and elastic character, and not fitted by its size, position, or relation, to occasion such embarrassment as was observable, particularly in the two cases first related, and that all these disorders subsided under a plan of treatment calculated to effect a change on the constituent elements of the blood; we may therefore conclude, that to its abnormal condition the general disturbance, as well as the local disease, is to be ascribed.

But it may be replied that these views, if correct, can only apply to that form of goitre denominated *vascular*, in which the blood-vessels are chiefly implicated, and cannot explain the melicerous degeneration or cystic formation in the thyroid gland. All authors, however, agree that the vascular passes into the other forms of bronchocele, and though sometimes temporary and marked by periodical augmentation and decrease, through causes acting on the general circulation, it becomes permanent and assumes the character of the other forms of degeneration. I have under my care at this time a lady aged sixty-three, who in early life was subject to leucorrhœa. She married when a girl of fifteen, having then a small, it may be a graceful goitre. She became the mother of a numerous family, and

at each of her confinements could remark the augmentation of the thyroid gland. She remarked it more conspicuously on the occasion of a most painful and tragical event in her family, when, in the course of one night, she assures me it nearly doubled in size. It has made progress ever since, and now, at the period of her grand climacteric, the unsightly mass rests upon her chest, and requires the aid of a suitable support. It is hard, unyielding, and unequal, and presents the character of hypertrophied and disorganized structure. It is curious to observe in this lady, even now, many of the features of the anæmic condition—the great nervousness—the morbid appetite—the dislike of animal and the craving for vegetable food—the pale waxy complexion—the palpitating heart—the throbbing head, and the thrilling pulse of unfilled arteries.

But the best proof that this form of thyroïdal enlargement passes into structural disease of a permanent kind, is afforded by the dissections which Sir Henry Marsh has been privileged to make after death. After relating the more prominent symptoms of a well-marked case of the disease now under consideration, Sir Henry exhibited to the Pathological Society a preparation illustrating the appearance after death. The first point to which he directed attention was the condition of the thyroid gland. It was altered in appearance since it had been first examined; it was now considerably shrunk; in its recent state it was much larger. When first examined, its surface was irregularly lobulated, and the lobes or cysts contained a considerable quantity of clear fluid. During life, it projected so as to form a very large and prominent tumour; whenever there was any inordinate action of the heart, it appeared to swell and increase in size, whilst at the same time the veins of the neck were so greatly distended as to give the patient a very extraordinary appearance. I must refer to the proceedings of the Society for a full account of the morbid appearances in other parts, and content myself now by stating, that the internal jugular vein of the right side was found so very much dilated, that when emptied by puncture it measured an inch and a half across; it was filled by dark fluid blood: that the left auricle was enormously enlarged; the walls were not hypertrophied, but the capacity was far beyond the normal standard. The dimensions of the right auricle were also considerably increased, though not to such an extent as those of the left; the muscular fibres of its walls were slightly hypertrophied. The left ventricle was dilated and hypertrophied, but not to a considerable degree. Along the margin of the mitral valve were depositions resembling granular fat. The same disease existed, and to a greater extent, in the valves of the right ventricle. The symptoms during life had existed a long time; the disease terminated in general anasarca, followed by erysipelas and gangrene.

It is worthy of remark, that while some cases of this affection, like that now related, pass into organic disease, others appear to undergo a spontaneous cure, such as that detailed by Dr Macdonnell,

when, after a continuance of many years, it is reported that the strength is daily increasing, the eyeballs have much diminished, though they still retain some of the peculiar staring; the enlarged thyroid has become more solid, and the heart's action is now tranquil, and unaccompanied by any abnormal sound. At an earlier period it is mentioned, that "the two lower thirds of the neck was occupied by a soft flabby tumour corresponding to the lobes of the thyroid body, the left portion of the tumour being much larger than the other. The whole tumour measured *sixteen* inches and a half around its most prominent part to the sixth cervical vertebra."

If anæmia is capable of such varied and extended effects, how important is its diagnosis! Fortunately in most of its forms it is not difficult of detection; it proclaims its own presence; and in the pallid countenance and rapid pulse, the breathlessness, and faintness, and palpitations on slight bodily or mental exertion, it is readily recognised; but even when masked and unsuspected, there are physical signs of no uncertain character which betray its lurkings. The soft systolic bellows murmur heard in the præcordial region, and followed by the ear into the large arterial trunks, is present when the impoverishment is great, and almost always under palpitation from excitement or other causes; and the peculiar sighing sound caused by the descent of the attenuated blood in the veins of the neck, and recognised by the stethoscope, even when the poverty is inconsiderable, lead to a sure and certain diagnosis, and suggest a plan of treatment which, in a large majority of cases, will be found equally sure and certain.

"These murmurs," says Dr Latham, "whether appertaining to the heart and arteries, or to the veins, which have their origin in the quality of the blood that circulates within them, furnish an eminent example of the highest degree of comprehensiveness, both for knowledge and for use, which can belong to the idea of a symptom.

"Where these murmurs are, there a countless variety of other symptoms is found in company with them, pointing to all organs of the body, and giving notice that the functions of all are going wrong; the surface pale and cold, palpitation and dyspnœa, appetite perverted, digestion imperfect, nutrition insufficient, secretion scanty and unhealthy, pain every where, and a shattered nervous system and an enfeebled brain. Such a portentous crowd of symptoms strikes the observer at once. But what they all mean we cannot tell until we take one single symptom for their sole and sufficient interpreter. The murmur, which is at the same time endocardial and arterial and venous, is comprehensive of them all, and includes the knowledge of them all, inasmuch as it points directly to their one common source, even the impoverished blood. And further, this same murmur not only contains the knowledge of all the rest, but it is the single representative of them all as an indication of treatment. Standing, as it does, for the sign of impoverished blood, we treat

what it denotes and nothing else. But in doing so we treat inclusively every error of function throughout the body which proceeds from it.”¹

How often have cerebral affections, severe, lasting, and intractable, been completely removed by discovering an anæmic cause in a long-continued or oft-repeated hæmorrhage from piles ! How often have cardiac disorders, too readily pronounced organic, been remedied by detecting the same cause in a long neglected menorrhagia or wasting leucorrhœa ! And so will we find, in some cases of less pressing moment, that a cure has been obtained when means considered specific had failed, by discovering that the quality of the blood was the real cause of the local affection.

Our first object in the treatment of anæmia and its secondary disorders is to ascertain the exciting cause, and having arrested or removed this, to improve the condition of the blood by the free use of the preparations of iron, and a liberal allowance of animal food, unless there are complications of such a kind as to contra-indicate their use. Wine is seldom necessary, and generally hurtful ; but porter or ale may be taken with advantage. A change of air, travelling, and passive exercise, also do good. Persistence, however, is absolutely necessary both on the part of the patient and his attendant. *Iron*, the chief means of cure, in order to be effectual, must be continued for months, and perhaps, after an interval, again and again renewed. It will not, however, disappoint our expectations ; for whether it act by invigorating and improving the digestive and assimilative functions, or by restoring and augmenting the red particles of impoverished blood, there is really no remedy in the hands of the physician, whose virtues have been so thoroughly tested and so deservedly recommended to our confidence and trust.

¹ Clinical Lectures on Diseases of the Heart, vol. i. p. 72.

